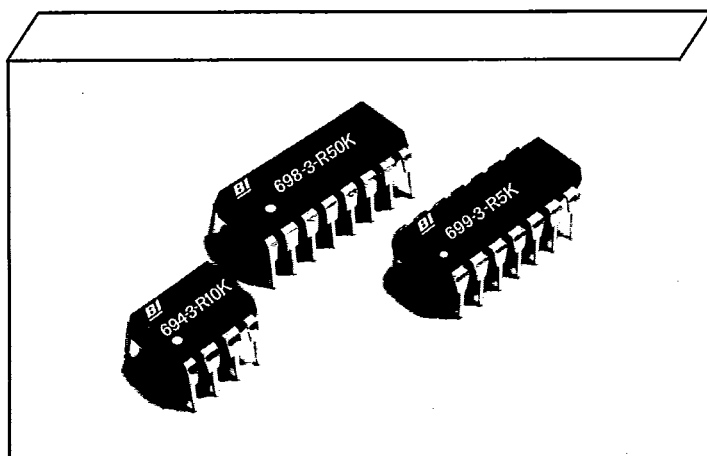




# Model 694, 698, 699

## Thin Film Precision

### Dual In-Line Resistor Network

#### Electrical

|                                          |                     |
|------------------------------------------|---------------------|
| Operating Temperature Range              | -65°C to 125°C      |
| Resistance Voltage                       | ≈0                  |
| Interlead Capacitance                    | <2pF                |
| Maximum Operating Voltage, Vdc           | 100V or $\sqrt{PR}$ |
| Minimum Insulation Resistance, Ohms      | 10,000 Meg          |
| Noise, Maximum (MIL-STD-202, Method 308) | -40dB               |

#### Mechanical

|                    |                         |
|--------------------|-------------------------|
| Lead Plating       | 60/40 Tin-Lead (Dipped) |
| Lead Material      | Alloy 42 or KOVAR®      |
| Substrate Material | Alumina                 |
| Resistor Material  | Nichrome                |
| Body Material      | Molded Epoxy            |

#### Environmental (Per MIL-R-83401)

|                                 |                             |
|---------------------------------|-----------------------------|
| Thermal Shock                   | ( $\Delta R$ ) $\pm 0.25\%$ |
| Power Conditioning              | ( $\Delta R$ ) $\pm 0.25\%$ |
| Short Time Overload             | ( $\Delta R$ ) $\pm 0.10\%$ |
| Terminal Strength               | ( $\Delta R$ ) $\pm 0.10\%$ |
| Moisture Resistance             | ( $\Delta R$ ) $\pm 0.20\%$ |
| Mechanical Shock                | ( $\Delta R$ ) $\pm 0.25\%$ |
| Vibration                       | ( $\Delta R$ ) $\pm 0.25\%$ |
| Low Temperature Storage         | ( $\Delta R$ ) $\pm 0.10\%$ |
| High Temperature Exposure       | ( $\Delta R$ ) $\pm 0.10\%$ |
| Load Life, 1000 Hours           | ( $\Delta R$ ) $\pm 0.10\%$ |
| Resistance to Soldering Heat    | ( $\Delta R$ ) $\pm 0.10\%$ |
| Dielectric Withstanding Voltage | 200V RMS for 1 Minute       |
| Marking Permanency              | per Paragraph 4.6.7         |
| Lead Solderability              | per Paragraph 4.6.6         |
| Flammability                    | UL-94V-0 Rated              |
| Storage                         | -65°C to 125°C              |

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Specifications subject to change without notice.

#### Accuracy Codes

| Code                                                   | A     | B    | D    | F        |
|--------------------------------------------------------|-------|------|------|----------|
| Absolute Resistance Tolerance, at 25°C                 | 0.1%  | 0.1% | 0.5% | 1.0%     |
| Ratio                                                  | 0.05% | 0.1% | 0.1% | 0.5%     |
| Temperature Coefficient of Resistance, ppm/°C          |       |      |      | $\pm 50$ |
| Temperature Coefficient of Resistance Tracking, ppm/°C |       |      |      | $\pm 5$  |

#### Standard Resistance Values, Ohms

| Models | 100* | 500* | 1K*  | 2K*  | 5K*  | 10K* | 20K* | 50K*  | 100K* |
|--------|------|------|------|------|------|------|------|-------|-------|
| 694-3  | 100* | 500* | 1K*  | 2K*  | 5K*  | 10K* | 20K* | 50K*  | 100K* |
| 694-6  | 1K   | 10K  |      |      |      |      |      |       |       |
| 697-7  | 1K   |      |      |      |      |      |      |       |       |
| 698-1  | 470  | 1K   | 2K   | 4.7K | 10K  | 20K  | 22K  | 47K   | 100K  |
| 698-3  | 100  | 330  | 470  | 1K*  | 1.5K | 2K   | 2.2K | 3.3K  | 4.7K  |
|        | 5K   | 10K* | 15K  | 20K* | 22K  | 47K* | 50K* | 100K* |       |
| 699-1  | 1K   | 4.7K | 5K   | 10K  | 20K  | 50K  | 100K |       |       |
| 699-3  | 1K   | 2K   | 3.3K | 4.7K | 5K   | 10K  | 20K  | 22K   | 47K   |
|        | 50K  | 100K |      |      |      |      |      |       |       |

All values available in Accuracy Codes, B, D, F.  
Values with an \* are also available in Accuracy Code A.  
Consult Factory for Additional Values.

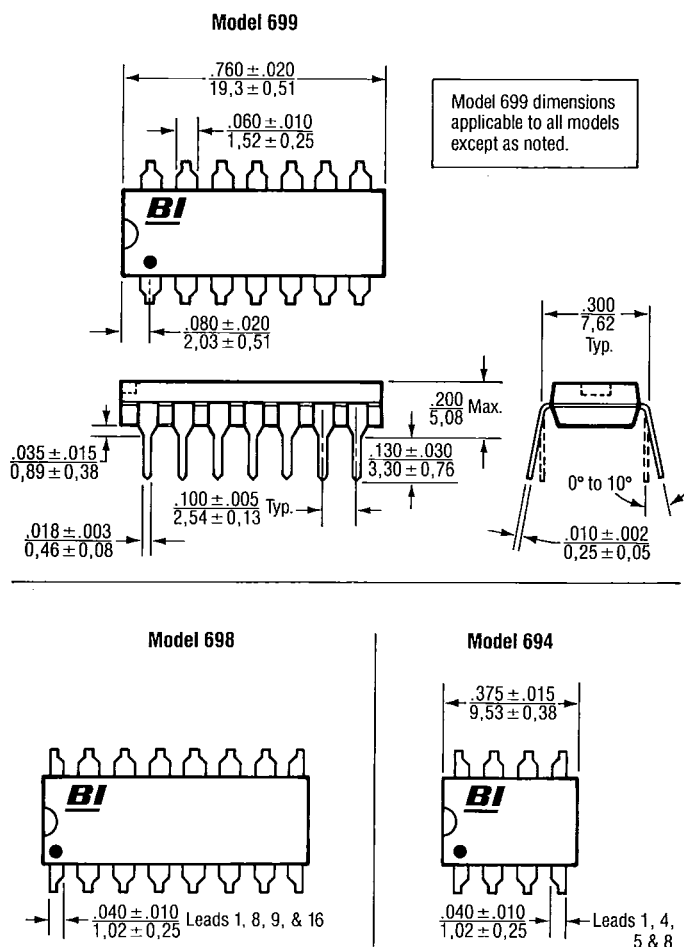
#### Applicable Documents

- MIL-R-83401 — Resistor Networks, Fixed, Film,  
General Specifications
- MIL-STD-202 — Test Methods for Electronics and Electrical  
Components Parts

# Beckman Industrial™

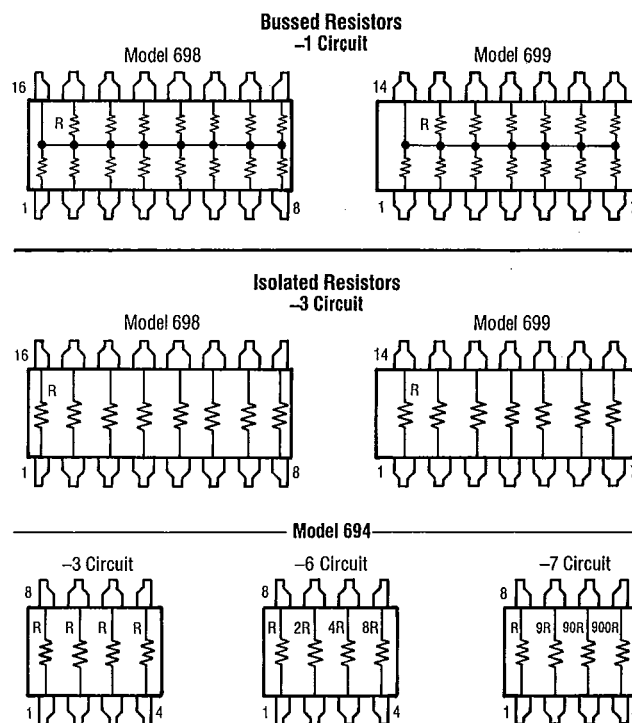
Affiliate of Emerson Electric Co.

## Outline Dimensions Inches mm



## Schematics

T-62-05



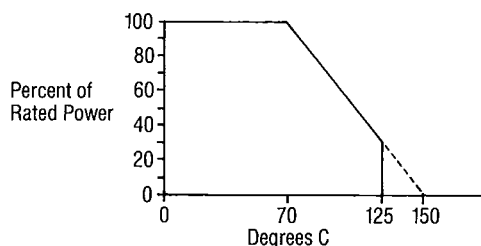
## Packaging

**Standard: Magazine**

All units oriented with lead #1 to the same side

Magazine Capacity, Units = 50 (8 leads)  
25 (16 leads)  
25 (14 leads)

## Power Derating Curve



## Power (Watts) Dissipation @ 70°C

| Model | Package | Resistor |
|-------|---------|----------|
| 694   | .4      | .15      |
| 698-1 | .6      | .05      |
| 698-3 | .6      | .10      |
| 699-1 | .6      | .05      |
| 699-3 | .6      | .10      |

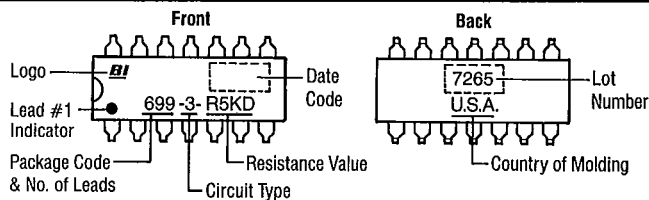
## Ordering Information

Model Series **69** **4** **-3-** **R10K** **B**

Number of Leads  
4 = 8 Leads  
8 = 16 Leads  
9 = 14 Leads

Accuracy Code  
Resistance Value  
Circuit Type  
-1 = Bussed  
-3 = Isolated

## Typical Part Marking



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